

most cities; as well as the general hubbub of hissing, roaring, etc., from the Power Station and the Main Trunk Railway. But any sharp noise in the immediate vicinity of their pool and the rails are most put out.

Their movement varies from a slow stalk when feeding to quick dashes, a fluttering patter across the surface of the duckweed and rarely, a short flight.

Although the character of the swamp changed with the first heavy autumn rain and was for a time the playground of Grey Duck and Black Swan the Spotless Crake could be heard in the same general area all winter and up to early September, when, it is thought, they may have moved elsewhere to breed. It is hoped that they will return and give more opportunity for pleasant study for all who wish to come.

PETER J. HOWARD



A CHECK ON WELCOME SWALLOWS IN NORTHERN NORTHLAND

Between 24th and 26th January, 1962, Messrs. A. T. Edgar, N. Messenger and I counted Welcome Swallows (*Hirundo neoxena*) on the Paua-Awanui-Kaeo road. We checked all bridges on this road, and also a few on nearby sideroads, some forty-seven in all.

On 24th January we inspected all bridges from Awanui to Kaimauamau, on 25th January from Kaimauamau to Paua, and on 26th January from Kaimauamau to Kaeo. The results seem to show that the Welcome Swallow is still increasing in range and numbers.

We have been told that Mr. D. V. Merton saw a Welcome Swallow the summer before actually at Paua. Our most northerly record was of two unoccupied nests under a culvert by the Kimberley Road turnoff, some two miles north of Houhora township, and roughly opposite the top of the Houhora Harbur.

At Houhora itself two adult Swallows were seen flying out from a concrete pipe by the rubbish dump about fifty yards from the hotel. The nest contained a single fresh egg. The first bridge north of Waiharara, a wooden culvert, had one nest which contained one egg. The sideroad to Kaimauamau has three bridges. The first, a very small wooden culvert over a ditch is known locally as Shines Bridge. It had two nests underneath. One nest contained two deserted eggs. The second bridge had no sign of Swallows; but the third, yet another small wooden culvert, had no less than five nests underneath it. Four appeared to have been in recent use; one of them had been built underneath the gap between two of the bridge planks and was full of road-dust, which had buried the single egg.

The old jetty or platform at L. Ngatu, where Swallows once bred, is now almost fallen down, and no nests were found. However a single Swallow was seen flitting over the raupo. A steel girder bridge at Waipapakauri, fifty yards south of the Commercial Hotel, had a single nest beneath it, and a pair of Swallows were flitting around. Swallows were not breeding under the Awanui Bridge, where they were first recorded breeding in New Zealand (1958), but two Swallows were seen nearby. Apparently Welcome Swallows quite often frequent an old breeding area, though they no longer nest there. Here the birds were noted on their characteristic "sweeping" flights over the surrounding countryside.

Two concrete bridge at Kaingaroa both had beneath them what may have been the remains of nests. However the first bridge east of Kaingaroa had a Swallow's nest attached to its smooth concrete under-wall. Many fresh droppings indicated that the nest was being used very recently.

Two bridges on the Aurere Flat had their Swallows. The first, four miles west of Taipa, was a rough wooden farm bridge, roughly sixteen yards long, which spans the meandering Aurere River, characterised at this point by its mauvish colour and stinking mud. The bridge was 150 yards from the main road, from which it was readily visible. A pair of Swallows were seen. They were just putting the finishing touches to a newly built nest. Two Swallows were also present by the large concrete bridge which crosses the Parara Stream, a tributary of the Aurere. It is not possible to see under all of this bridge, but the extreme agitation of the birds indicated a nest.

No sign of Swallows was found near the next twelve bridges, but, by the thirteenth, near the Pupuke Road turnoff, some four miles before Kaco, three Swallows were seen sitting on the power lines. No evidence of their breeding was found nearby, but there must be many suitable places such as barns, in the adjacent countryside. Swallows have not previously been recorded in this area.

The nests were of mud compacted with grass stems, scraps of fibrous material and fragments of wood and lined with feathers, usually from some nearby farmyard. Guinea Fowl and Hen feathers were both noted. Some of the old nests had no feather lining. External measurements for eleven nests of normal construction were taken. The breadth (from side to side) varied from 60 to 120 mm., and averaged 80 mm., the width (from back to front) varied from 110 to 145 mm., and averaged 130 mm., and the depth varied from 70 to 110 mm., and averaged 80 mm. The depth of the egg-chambers varied from 30 to 50 mm., and was normally 30-35 mm.; but the egg-chamber of one nest at Kaingaroa was 50 mm. deep. At the time we thought the extra depth was probably because of the lack of headroom due to the angle of the wall which sloped forward just above the back of the nest-rim. Height between the rim of the nest and the underneath of the bridge varied from 40 to 80 mm., averaging 50 mm. We formed the impression that the rougher the surface to which the nest was attached, the less deep the area of attachment, and vice versa.

All the nests we found were by streams or rivers; but it should be understood that our search was concentrated on road-bridges. We formed the impression that Swallows favoured as nest-sites the bridges which were so situated that the birds could have a clear sweep through under the bridge, and that bridges, where the clear sweep through was prevented by willows or other vegetation on one or the other side of the bridge, had no nests..

The height above the water varied from four to about fifteen feet. Only one nest was not directly above the water. Droppings examined were noted to contain the shiny wing-cases of some insect.

In the first few years when Swallows were found breeding in New Zealand, all nests recorded were attached to the underside of rough wooden bridges or similar structures, mainly because all the bridges in this original area are wooden. However, as the Swallow's range extends, so does its variety of nesting sites. Although no fewer than eleven of the nests which we examined were on wooden bridges,

some others were in different situations. One nest (Waipapakauri) was attached to the wood and malthoid above a steel girder under a bridge, and another (Kaingaroa) was attached to the smooth concrete wall of the bridge. The Houhora nest was completely different from any previously recorded in New Zealand. Two pipes, roughly four feet in diameter, and made up of various sections, go under the road. One of these sections had sunk slightly, leaving a gap of 70 mm. between the top of this particular section and the malthoid which covered the pipes. Here a small cup-shaped nest, only 30 mm. deep, was built, on top of the pipe and not attached to a vertical surface.

The stage of nesting varied. No nests examined contained young, though in some cases they had obviously left only recently. Almost all the nests had been used in the past few months. The Houhora nest contained one egg, as did the Waipapakauri nest. Evidently laying had just started again. On the Kaimaumau Road one nest contained two eggs and had been deserted, although Mr. R. H. Michie informs us adult birds were present only a fortnight before. A nest on a nearby bridge had been built directly below the gap between two boards in the bridge itself. Dust had come through and filled the nest, burying an egg. Another nest, on the Aurerere River, was only just completed.

The eggs are of white ground colour, with a few very light grey undermarkings, and had reddish brown spots or blotches, mostly concentrated at the larger end. Measurements of three eggs were — 18 x 12.5, 17 x 12.5 and 17 x 12 mm.

If in a few years' time another check of all bridges on these roads could be made, some statistical evidence of the Welcome Swallow's status in the far north of New Zealand might be obtained.

P. D. G. SKEGG



FLOCKING OF WELCOME SWALLOWS NEAR KAIKOHE

Te Iringa

Roger Simpson reports that a flock of 32 appeared on 10/2/62 around the school; mounted to 37 on 20/2/62 and on 22/2/62 a flock of about 100 appeared for a brief time. About the week-end of 11th-12th March, the Welcome Swallows disappeared.

Northland College Farm

- 3/12/61 2 Swallows flying about wooden bridge. 2 young birds seen roosting under bridge.
- 5/12/61 3 Swallows flying over bridge, 2 adults, 1 young bird. 2 nests found under bridge. 1 nest (this season's) complete; the other (last season's?) partly destroyed.
- 10/2/62 No trace of 2 nests seen last December. 1 new nest built during school holidays — empty, but had been used. Throughout remainder of first school term adults and young birds seen constantly in vicinity of bridge, varying in numbers from 1 to 10; perhaps one pair of parents and two broods raised under bridge.
- Second term (last observation 19th June) only two adult birds seen in vicinity of bridge.